

REPORT DOCUMENTATION PAGE

AFRL-SR-BL-TR-01-

Public reporting burden for this collection of information is estimated to average 1 hour per response, including the gathering and maintaining the data needed, and completing and reviewing the collecting of information. Send comments on this collection of information, including suggestions for reducing this burden, to Washington Headquarters Services, Directorate for Information Operations and Infrastructure, Division of采購 and Acquisition, 8725 Wisconsin Avenue, Suite 1204, Arlington, VA 22202-4302, and to the Office of Management and Budget, Paperwork Reduction Project 0704-0188.

i,
s
n

1. AGENCY USE ONLY (Leave Blank)	2. REPORT DATE	3. REPORT TYPE AND DATES COVERED	
	Aug. 20, 2001	Final technical report 01 Jul 2000 30 Jun 2001	
4. TITLE AND SUBTITLE Sixth Conference on Molecular Reaction Dynamics in Condensed Matter			5. FUNDING NUMBERS <u>F49620-00-1-0332</u>
6. AUTHORS Dana D. Dlott			<u>2303/EX</u> <u>61102F</u>
7. PERFORMING ORGANIZATION NAME(S) AND ADDRESS(ES) Board of Trustees, University of Illinois at Urbana Champaign			8. PERFORMING ORGANIZATION REPORT NUMBER
9. SPONSORING / MONITORING AGENCY NAME(S) AND ADDRESS(ES) AFOSR/NL			10. SPONSORING / MONITORING AGENCY REPORT NUMBER
11. SUPPLEMENTARY NOTES AIR FORCE OFFICE OF SCIENTIFIC RESEARCH (AFOSR) NOTICE OF TRANSMITTAL DTIC. THIS TECHNICAL REPORT HAS BEEN REVIEWED AND IS APPROVED FOR PUBLIC RELEASE			
12a. DISTRIBUTION / AVAILABILITY STATEMENT LAW AFR 100-12. UNRESTRICTED DISTRIBUTION CODE			
13. ABSTRACT (Maximum 200 words) The Sixth Conference on Molecular Reaction Dynamics in Condensed Matter was held Feb. 28- Mar 3 at the Hotel La Casa del Camino in Laguna Beach, CA, sponsored by AFOSR and UC Irvine, and organized by D. Dlott and A. Apkarian. There were 39 attendees, including professors, graduate students, postdoctoral fellows, technical staff members from national laboratories and a representative from AFOSR. 34 talks were presented. There were 21 invited talks (50 minutes with discussion) and 9 contributed talks (25 minutes with discussion). Lively discussion continued until the wee hours. The conference website is: http://dlottgroup.scs.uiuc.edu/moldyn/			
Symposia on the following topics were presented: 1. New frontiers 2. Multidimensional spectroscopy 3. Condensed phase dynamics 4. Chemical reaction dynamics 5. Confined molecules: clusters and droplets			
14. SUBJECT TERMS Molecular reaction dynamics			15. NUMBER OF PAGES 8
			16. PRICE CODE
17. SECURITY CLASSIFICATION OF REPORT	18. SECURITY CLASSIFICATION OF THIS PAGE	19. SECURITY CLASSIFICATION OF ABSTRACT	20. LIMITATION OF ABSTRACT

20011012 027

1. Cover sheet for Final Progress Report to AFOSR

PI Name: Dlott, Dana D.

Institution: University of Illinois

PI address: Box 01-6 CLSL, 600 S. Mathews Ave., Urbana, IL 61801

Email: dlott@scs.uiuc.edu

Contract/Grant No. F49620-00-1-0332

Title of project: Sixth Conference on Molecular Reaction Dynamics in Condensed Matter

Reporting period: 01 Jul 2000--30 Jun 2001

2. Status of effort

The Sixth Conference on Molecular Reaction Dynamics in Condensed Matter was held Feb. 28- Mar 3 at the Hotel La Casa del Camino in Laguna Beach, CA, sponsored by AFOSR and UC Irvine, and organized by D. Dlott and A. Apkarian. There were 39 attendees, including professors, graduate students, postdoctoral fellows, technical staff members from national laboratories and a representative from AFOSR. 34 talks were presented. There were 21 invited talks (50 minutes with discussion) and 9 contributed talks (25 minutes with discussion). Lively discussion continued until the wee hours. The conference website is: <http://dlottgroup.scs.uiuc.edu/moldyn/>

Funding provided by AFOSR and UC Irvine was used to reimburse travel and lodging for invited speakers. Vouchers for all available funding have been submitted. The AFOSR account shows a total of \$385 in unspent funds.

Symposia on the following topics were presented:

1. New frontiers
2. Multidimensional spectroscopy
3. Condensed phase dynamics
4. Chemical reaction dynamics
5. Confined molecules: clusters and droplets

A list of attendees and a summary of talks presented is attached.

SIXTH SYMPOSIUM ON MOLECULAR REACTION DYNAMICS IN CONDENSED MATTER

Laguna Beach, CA

Program Chairs: D. Dlott (Illinois) and V. A. Apkarian (Irvine)

Program sponsors: Air Force Office of Scientific Research, University of California University of California, Irvine, Office of Research and Graduate Studies

Wednesday, Feb. 28

Arrival and check in

5:00 - 7:00 pm Reception

7:30 - 9:10 pm *New frontiers I -- Chair Dana Dlott*

7:30	Ara Apkarian	Irvine	Massive molecular coherences from control to computation
8:20	Wilson Ho	Irvine	Single molecule dynamics on metal surfaces

Thursday, Mar. 1

7:30 – 9:00 am Breakfast

9:00 -12:15 *Multidimensional spectroscopy I -- Chair Ara Apkarian*

9:00	Andy Albrecht	Cornell	Multidimensional time-resolved coherent Raman six-wave mixing
9:50	Michael Fayer	Stanford	Ultrafast multidimensional vibrational echo experiments
10:40	Break		
11:00	Delmar Larsen	Berkeley	Investigation of the wavelength dependent properties of resonant third-order time domain spectroscopies
11:25	Marcos Dantus	Michigan State	Measuring electronic, vibrational and rotational coherence with femtosecond four-wave mixing techniques

12:15 -2:00 pm Lunch

2:00 –5:40 pm

Condensed phase dynamics I -- Chair Steven Bradforth

2:00	Kevin Lehman	Princeton	Spectroscopy and dynamics in helium nanodroplets
2:50	Norbert Scherer	Chicago	From Femtosecond Fluctuations to Single Molecule Kinetics: Dynamics in Proteins
3:40	Break		
4:00	Ben Schwartz	UCLA	How do solvent molecules control electron transfer? Femtosecond studies of the charge-transfer-to-solvent reaction of the sodium anion
4:25	Huib Bakker	AMOLF	Femtosecond mid-infrared spectroscopy of aqueous solvation shells
5:15	Cather Simpson	Case Western Reserve U	Vibrational dynamics of metallo-porphyrins in solution

6:00 - 8:00 pm

Dinner

8:00 – 10:05 pm

Chemical reaction dynamics -- Chair Benjamin Schwartz

8:00	C. B. Harris	Berkeley	Femtosecond IR studies of chemical reactions in liquids
8:50	Steve Bradforth	USC	Relaxation of photoelectrons in liquid water
9:15	R. B. Gerber	Irvine	Dynamics of electronic relaxation and of charge transfer reactions in rare-gas media

Friday, Mar. 2

7:30 – 9:00 am Breakfast

9:00 -12:15 pm *Multidimensional spectroscopy II -- Chair Marcos Dantus*

9:00	Andrei Tokmakoff	MIT	Observing vibrational structure and dynamics through coherent 2D infrared spectroscopy
9:50	Andrei Piryatinski	Wisconsin	Simulations of three-pulse 2D IR photon echoes in lennard-jones liquids
10:15	Break		
10:35	Dana Dlott	Illinois	Three dimensional vibrational spectroscopy of vibrational energy relaxation in liquids
11:25	Shaul Mukamel	Rochester	Multidimensional coherent spectroscopies of polypeptides and chromophore aggregates

12:15 -2:00 pm Lunch

2:00 – 6:05 pm *Condensed phase dynamics II – Chair Andrei Tokmakoff*

2:00	Hiroshi Masuhara	Osaka	Laser-induced molecular processes and nanometer morphological dynamics in organic films
2:50	Chris Bardeen	Illinois	The roles of static structure and vibrational relaxation in exciton localization for the conjugated polymer PPV
3:15	Mark Berg	South Carolina	Transport properties of small solutes in polymer melts: Rotational dynamics from the small-molecule to polymer limit
3:40	Break		
4:00	Misha Ovchinnikov	Utah	Semi-classical calculations of linear and non-linear spectra in condensed phases
4:50	Eric Chronister	Riverside	Low frequency dynamics in molecular crystals and glasses under high pressure
5:15	John Fourkas	Boston College	Developing a microscopic picture of confined liquids

New Frontiers II – Chair Chris Bardeen

8:00	Roger Miller	North Carolina	The dynamics and growth of metastable species in helium nanodroplets
8:50	Frans DeSchryver	Leuven	Time and space resolved spectroscopy of dendritic structures from ensembles to single molecules

Saturday, Mar. 3

7:30 – 9:00 am Breakfast

9:00 - 12:25 *Confined molecules: clusters and droplets* – Chair **Dana Dlott**

9:00	Stefan Hell	MPI Göttingen	Ultrafast dynamics microscopy
9:50	Jussi Eloranta	UCI	Bubble States in Liquid Helium
10:15	Break		
10:35	Andrej Vilesov	USC	Spectroscopy in superfluid helium droplets
11:25	Carl Lineberger	Colorado	Solvent driven electron transfer in size-selected clusters: Asymmetry counts!

12:15 *Conference ends*

Last Name	First Name	Title	Institution	Department	Address	City	State	Zip	Phone Number	Fax Number	E-Mail
Apkarian	V. Ara	Professor	University of California, Irvine	Department of Chemistry	516 Rowland Hall	Irvine	CA	92697-2025	(949)824-6851	(949)824-3168	aapkarina@uci.edu
Dlott	Dana	Professor	University of Illinois, Urbana-Champaign	Department of Chemistry	505 South Mathews Avenue	Urbana	IL	61801	(217)333-3574	(217)244-3186	d-dlott@uiuc.edu
Berman	Michael	Doctor	Air Force Office of Scientific Research (AFOSR)		801 N. Randolph Street	Arlington	VA	22203	703-696-7781	703-696-8449	michael.berman@afosr.af.mil
Bezel	Ilya	Miller Research Fellow	Miller Institute for Basic Research in Science	Department of Chemistry - UC Berkeley	2536 Channing Way	Berkeley	CA	94720	510-642-6389	510-642-6724	iliab@chem1.usc.edu
Bihary	Zsolt	Graduate Student	University of California, Irvine	Department of Chemistry	516 Rowland Hall	Irvine	CA	92697-2025	949-824-5841	949-824-3168	zsolt@uci.edu
Davis	Paul	Graduate Student	Stanford University	Department of Chemistry	Roth Way	Stanford	CA	94305-5080	650-723-0633	650-723-4817	phd@standford.edu
Fiedler	Steve	Graduate Student	University of California, Irvine	Department of Chemistry	516 Rowland Hall	Irvine	CA	92697-2025	949-824-5841	949-824-3168	sfiedler@uci.edu
Ghazarian	Vahan	Graduate Student	University of California, Irvine	Department of Chemistry	516 Rowland Hall	Irvine	CA	92697-2025	949-824-5841	949-824-3168	vahle@uci.edu
Jungwirth	Pavel	Graduate Student	University of California, Irvine	Department of Chemistry	516 Rowland Hall	Irvine	CA	92697-2025	949-824-5841	949-824-3168	mkaravit@uci.edu
Karavitis	Mike	Graduate Student	University of California, Irvine	Department of Chemistry	1624 Verano Place	Irvine	CA	92612	949-307-5416	949-824-3168	masqrol@hotmail.com
Sgroi	Michael	Graduate Student	Stanford University	Department of Chemistry		Stanford	CA	94305	650-723-0633	650-723-4817	thompson.zog.stanford.edu
Thompson	David	Doctor	Stanford University								
Bardeen	Chris	Assistant Professor	University of Illinois	Department of Chemistry	600 S. Mathews Ave.	Urbana	IL	61801	217-265-5017	217-244-3186	bardreen@scs.uiuc.edu
Berg	Mark	Associate Professor	University of South Carolina	Department of Chemistry & Biochemistry		Columbia	SC	29208	803-777-1514	803-777-1456	berg@mail.chem.sc.edu
Bradforth	Stephen	Assistant Professor	University of Southern California	Department of Chemistry	920 W. 37th Street, Univ. Park	Los Angeles	CA	90089-0482	213-740-0461	213-740-3972	bradfort@chem1.usc.edu
Chronister	Eric	Professor	University of California, Riverside	Department of Chemistry	Pierce Hall	Riverside	CA	92521	909-787-3288	909-787-3420	eric.chronister@ucr.edu
Eloranta	Jussi	Research Assistant	University of California, Irvine	Department of Chemistry	516 Rowland Hall	Irvine	CA	92697-2025	949-824-5841	949-824-3168	eloranta@jyu.fi
Larsen	Delmar	Research Associate	University of Wisconsin - Madison	Department of Chemistry	Hildebrand Hall	Berkeley	CA	94720	510-643-7609		dslarsen@zepto.chem.berkeley.edu
Piryatinski	Andrei	Assistant Professor	University of California, Los Angeles	Department of Chemistry & Biochemistry	607 Charles Young Dr. East	Los Angeles	CA	53706	608-262-4782	608-262-9918	apiryat@skin1.chem.wisc.edu
Schwartz	Ben	Professor	University of California, Los Angeles	Department of Chemistry & Biochemistry							schwartz@chem.ucla.edu

Simpson	Cather	Assistant Professor	Case Western Reserve University	HOME ADDRESS	4170 Lander Rd.	Orange	Ohio	44022
Albrecht	Andreas	Professor	Cornell University	Department of Chemistry & Chemical Biology	Baker Laboratory Kruislaan 407	NY Amsterdam	14853-1301 Netherlands	607-255-3990 31-20-6684106
Bakker	Huib	Doctor	Fon-Amolff Michigan State University	Department of Chemistry	58 Chemistry Building	East Lansing	1098 SJ MI	607-255-4137 bakker@amolff.nl
Dantus	Marcos	Professor	KULeuven	Department of Chemistry	Celestijnenlaan 200F	Belgium	48824-1322 B-3001	31-20-66841359 513-353-1793
DeSchryver	Frans	Professor	Stanford University	Department of Chemistry	Eugene F. Merkert Chem. Ctr.	Stanford	CA MA	31-20-6684106 frans.deschryver@chem.kuleuven.ac.be
Fayer	Michael	Professor	Boston College	Department of Chemistry	516 Rowland Hall	Irvine	94305 CA	607-255-4446 650-723-4817
Fourkas	John	Professor	University of California, Irvine	Department of Chemistry	D-87 Ieldebrand Hall	Berkeley	2467 CA	617-552-3611 fourkas@bc.edu
Gerber	Benny	Professor	University of California, Berkeley	High Resolution Optical Microscopy	Am Fassberg	Germany	92697-2025 94720	617-552-2705 949-824-6758
Harris	Charles	Professor	Max-Planck - Institute of Biophys. Chemistry	Department of Physics & Chemistry	Fredrick Reines Hall	Göttingen	D-37070 Irvine	610-642-2814 949-824-8571
Hell	Stefan		University of Colorado	Department of Chemistry	Erick Lab, Washington Road	Princeton	92697-4575 08344-1009	510-642-6724 bgerber@uci.edu
Ho	Wilson	Professor	University of Colorado	Department of JILA	440 UCB	Boulder	08309-0440 Suita	49-557-2011366 949-824-5234
Lehmann	Kevin	Professor	Osaka University	Applied Physics	Yamada-oka 2-1	Osaka	609-258-5026 5650877	609-258-6665 303-492-7834
Lineberger	W. Carl	Professor	John B. Carroll Prof.	Department of Chemistry	CB #3290 Venable Hall	Chapel Hill	919-962-0528 27599-3290	303-492-8994 949-824-2174
Masuhara	Hiroshi	Professor	University of North Carolina - CH	Department of Chemistry	Room 468	NY	14627-0216 84112-0850	WCL@JILA.Colorado.edu wilsonho@uci.edu
Miller	Roger		University of Rochester	Department of Chemistry	315 S. 1400 E., Room 2020	Rochester	716-275-3080 801-585-5909	716-473-6889 lehmann@princeton.edu
Mukamel	Shaul		University of Utah	Department of Chemistry	5735 S. Ellis Ave.	Chicago	60637 IL	773-702-7069 mukamel@chem.rochester.edu
Ovchinnikov	Misha	Professor	University of Chicago	Massachusetts Institute of Technology	77 Massachusetts Ave., #6-225	Cambridge	2139	801-581-4353 misha@hec.utah.edu
Scherer	Norbert	Professor	Massachusetts Institute of Technology	Department of Chemistry	920 West 37th Street	Los Angeles	90089	773-702-0805 nfschere@uchicago.edu
Tokmakoff	Andrei	Assistant Professor	University of Southern California	Department of Chemistry				617-253-4503 tokmakof@mit.edu
Vilesov	Audrey	Doctor						617-253-7030 vilesov@chem1.us@edu